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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/557,640	04/25/2000	William J. Dally	2789.2001-001	9254

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EXAMINER

TRAN, THIEN D

ART UNIT PAPER NUMBER

2665

15

DATE MAILED: 08/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/557,640

Applicant(s)

DALLY ET AL.

Examiner

Thien D Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-26 is/are allowed.
- 6) ☒ Claim(s) 1-10 and 14-17 is/are rejected.
- 7) ☒ Claim(s) 11-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date g.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10, 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al (U.S Patent No. 6,208,183) in the view of Chu et al (U.S Patent No. 6,285,225 B1).

Regarding claims 1, 5, 14, Li discloses a GDLL 200, col.5 lines 65, (clock multiplier) comprising:

a voltage controlled delay line 220 or 222 (delay line) which provides a CLKout (multiplied clock), figure 3;

a clock multiplexer 216 which applies as an input to the delay line, at respective times, the multiplied clock and a reference clock, figure 3; and

a delay adjustment circuit including a proportional phase comparator which adjusts delay in the delay line based on a phase comparison of the reference clock and of a CLKout. See col.4 lines 25-35.

Liu does not disclose that a direct comparison of the reference clock and the CLKout. Chu discloses a DLL having a direct comparison of a reference clock and a

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delay of signal at a charge pump outputting at VDC 11 (multiplied clock), figure 1, col.4 lines 25-32. Therefore, it would have been obvious to one having ordinary skill in the art to implement the feature of direct comparison of a reference clock and a delay of signal at a charge pump outputting at VDC 11 (multiplied clock) to the DLL circuit of Chu because it is a design choice used to adjust phases of signals to achieve synchronization.

Regarding claims 2, 3, 8, 9, 15, 16 Li discloses a clock multiplier in which the phase comparator has an amount of phase offset, col.7 lines 30-40. Li does not specifically disclose that the phase offset being at five percent of bit time or ten percent of gate time. However, it would have been obvious to one having ordinary skill in the art to have the offset being at five percent of bit time or ten percent of gate time so that the phase adjustment can be adjusted more efficient.

Regarding claims 4, 10, 17 Li discloses the delay adjustment circuit that includes a combined phase comparator and charge pump. See col.7 lines 41.

Regarding claim 6, Li discloses the clock multiplier further comprises a clock multiplexer, which applies as an input to the delay line, at respective times, the multiplied clock and the reference clock. See col.8 lines 10-15.

Regarding claim 7, Li discloses the phase comparator is a proportional phase comparator. See col.7 lines 50-60.

Allowable Subject Matter

3. Claims 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. Claims 18-26 are allowed.

Conclusion

5. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Thien Tran whose telephone number is (703) 308-4388. The examiner can normally be reached on Monday-Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (703) 308-6602. Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Thien Tran


STEVEN NGUYEN
PRIMARY EXAMINER